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14. ABSTRACT

Purpose: Many service members today are married, and many also have children; deployments affect all members of the military family. The purpose of this study was two-fold: 1) to look at parenting stress in Navy active duty fathers; and 2) to evaluate spirituality and social support in both civilian mothers and active duty fathers who had experienced a recent Navy deployment. **Design**: This study used a cross-sectional correlational research design. The major independent variables were four specific deployment factors, spirituality, and social support. Demographic covariates were included, as well as current PTSD symptoms, current depressive symptoms, and other life stressors. The dependent variable was parenting stress. **Methods**: All eligible participants completed an electronic survey which consisted of demographic information, and eight validated psychosocial scales. **Sample**: The sample consisted of 111 active duty Navy fathers, and 82 of their female civilian spouses. Fathers must have returned from deployment within the past 3 to 12 months, and must have had at least one child more than one month of age, and less than six years of age, living in the same home. **Analysis**: Descriptive statistics, as well as Pearson correlational analysis, t-test analysis, bivariate regressions, and hierarchical multiple regressions were conducted. **Findings**: As deployment factors increased, parenting stress increased for fathers in the reintegration period, with a potential mediation effect of depression. As spirituality and social support scores increased, parenting stress scores decreased significantly for both mothers and fathers. **Implications for Military Nursing**: As parenting stress increases, optimal child outcomes decrease. Being able to identify high levels of parenting stress, and factors which can mitigate it, will lead to better health outcomes for our military families. Nurses at all levels interact with military personnel and their families on a daily basis: nurses can identify families at risk and intervene early to prevent harm to the family.

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military deployment, parenting stress, reintegration, PTSD, depressive symptoms, life stressors

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TABLE OF CONTENTS

Abstract

Purpose: Many service members today are married, and many also have children; deployments affect all members of the military family. The purpose of this study was two-fold: 1) to look at parenting stress in Navy active duty fathers; and 2) to evaluate spirituality and social support in both civilian mothers and active duty fathers who had experienced a recent Navy deployment.

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Methods: All eligible participants completed an electronic survey which consisted of demographic information, and eight validated psychosocial scales.

Sample: The sample consisted of 111 active duty Navy fathers, and 82 of their female civilian spouses. Fathers must have returned from deployment within the past 3 to 12 months, and must have had at least one child more than one month of age, and less than six years of age, living in the same home.

Analysis: Descriptive statistics, as well as Pearson correlational analysis, t-test analysis, bivariate regressions, and hierarchical multiple regressions were conducted.

Findings: As deployment factors increased, parenting stress increased for fathers in the reintegration period, with a potential mediation effect of depression. As spirituality and social support scores increased, parenting stress scores decreased significantly for both mothers and fathers.

Implications for Military Nursing: As parenting stress increases, optimal child outcomes decrease. Being able to identify high levels of parenting stress, and factors which can mitigate it, will lead to better health outcomes for our military families. Nurses at all levels interact with military personnel and their families on a daily basis: nurses can identify families at risk and intervene early to prevent harm to the family.

TSNRP Research Priorities that Study Addresses

Primary Priority

Force Health Protection:	X Fit and ready force X Deploy with and care for the warrior X Care for all entrusted to our care
Nursing Competencies and Practice:	☐ Patient outcomes ☐ Quality and safety ☐ Translate research into practice/evidence-based practice ☐ Clinical excellence ☐ Knowledge management ☐ Education and training
Leadership, Ethics, and Mentoring:	☐ Health policy ☐ Recruitment and retention ☐ Preparing tomorrow's leaders ☐ Care of the caregiver
Other:	☐

Secondary Priority

Force Health Protection:	☐ Fit and ready force ☐ Deploy with and care for the warrior ☐ Care for all entrusted to our care
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Other:	☐

Progress Towards Achievement of Specific Aims of the Study

Findings related to each specific aim, research or study questions, and/or hypothesis:

This was designed as a feasibility study, and as such, it was important to determine if participants were willing to give information on the sensitive self-reported topics of parenting stress, deployment factors, concurrent stressors such as PTSD and depression, and spirituality and social support.

As part of the feasibility objective, participants were willing to give information on the sensitive topics touched on in this study, and the withdrawal rate was 3%. The comments by those who took the survey were overwhelmingly positive, and many participants expressed appreciation for the opportunity to give information on these topics.

The primary aim is to explore the relationship between deployment factors and parenting stress, controlling for demographic variables in recently returned male active duty parents.

Descriptive characteristics for the study sample of active duty Navy fathers can be seen here in Table 1.

Table 1
Characteristics of Study Variables

n = 111	Fathers (M, SD)	Range in the Sample
Demographics		
Age	32.14 (±6.10)	21 - 47
Years of Education	14.23 (±2.29)	12 - 20
Years of Marriage	6.37 (±3.80)	0 - 17
Number of Children	2.06 (±1.13)	1 - 7
Years in the Military	10.03 (±5.33)	2 - 23
Predictors		
Number of Deployments	2.39 (±1.27)	1 - 7
Time Away from Home (months)	19.95 (±11.31)	3 - 58
Perceived Threat	24.06 (±10.30)	12 - 56
Life Stress	10.66 (±9.01)	0 - 47
PTSD	1.03 (±1.37)	0 - 4
Depression	4.70 (±4.73)	0 - 21
Outcome		
Parenting Stress	216.93 (±46.72)	129 - 326

	Fathers (n, %)
Demographics	
Race	
Caucasian	72 (64.86)
African-American	26 (23.42)
Other	13 (11.71)
Hispanic	19 (17.12)
Used weekly childcare	50 (45.05)
Rank	
Junior enlisted (E1 - E5)	49 (44.14)
Senior enlisted (E6 - E9)	46 (41.44)
Junior officer (O1 - O3)	10 (9.01)
Senior officer (O4 - O6)	6 (5.41)
Deployment location	
Iraq/Afghanistan	7 (6.31)
Ship-based	75 (67.57)
Other	29 (26.13)
PTSD positive screens	19 (17.12)
Depression positive screens	19 (17.12)
Top 6 Life Stressors	
1: Promotion at work	42 (37.84)
2: Moved to new location	41 (36.94)
3: Trouble with superiors at work	32 (28.83)
4: Pregnancy	23 (20.72)
5: Began new job	24 (21.62)
6: Death of close friend	21 (18.92)
Predictors	
Warfare Exposure	
Low	68 (61.26)
Medium	35 (31.53)
High	8 (7.21)

Of the fathers in this study, 36% had only one child at home under the age of six; the rest of the fathers had more than one child in this range. At the time of enrollment, the majority of fathers had returned from a ship-based deployment (67.6%), a small number had returned from either Iraq or Afghanistan (6.3%), and the rest had been deployed in other locations, mostly in the Middle East (26.1%). Of note, none of the participants reported zero warfare exposure. In the sample, 17.1% screened positive for PTSD, and 17.1% screened positive for depression. Of those with positive screens for PTSD and depression, only five participants screened positive for both.

To explore the relationship between deployment factors and parenting stress, a hierarchical linear regression model was examined; these results can be seen in Table 2. Perceived threat and warfare exposure were both significant independent predictors of total parenting stress scores. Perceived threat had a regression coefficient of .97, with a p value of 0.025. Thus, for each unit change upwards in perceived threat, parenting stress increased by .97, and this was significant. For the medium vector of warfare exposure, the jump from low to medium exposure was associated with an increase of 16.96 points in parenting stress, which trended toward significance ($p = 0.077$). For the high vector of warfare exposure, the jump from low to high warfare exposure was associated with an increase of 38.44 points in parenting stress, which was significant ($p = 0.026$).

But the magnitude of these effects decreased steadily with sequential adjustments for more factors. For both perceived threat and warfare exposure, the association was greatly attenuated after adjusting for PTSD (model 4), and depression (model 5), and when the model was adjusted for these variables, the associations were no longer significant.

Based on prior literature which has shown a connection between warfare exposure and depression (Booth-Kewley, Highfill-McRoy, Larson, Garland, & Gaskin, 2012; Sareen et al., 2007), it seemed possible that one or more of the stressor covariates (life stress, depression, PTSD) could be mediating the relationship between the significant deployment factors and parenting stress. Results of a mediation analysis are shown in Figures 1 and 2. In Figure 1, depression symptoms completely mediated the effect of perceived threat on parenting stress scores. In Figure 2, depression symptoms completely mediated the effect of warfare exposure on parenting stress scores.

Within this sample, increases in deployment factors were significantly associated with increases in parenting stress for Navy fathers. In particular, a father's perceived threat during his most recent deployment, and a father's warfare exposure on his most recent deployment, were significantly associated with increased in parenting stress. These results are highly relevant for assessment of health in military service members; high parenting stress scores are associated with decreased positive parenting behaviors (Oxford & Lee, 2011; Rholes, Simpson, & Friedman, 2006). Scores above the 85th percentile for the Parenting Stress Index are clinically significant, and referrals should be considered (Abidin, 2012).

However, it may be difficult to find time in a busy clinic schedule to ask parent patients to answer a full Parenting Stress Index, which takes an average of 20 minutes to complete. But, many more respondents may be comfortable answering 3 or 4 general information questions relating to the perceived danger and warfare exposure of their

Table 2

Associations of Deployment Factors and Parenting Stress with and without Adjustment for other Factors in the Full Sample

n=111	Model 1 (Unadjusted)	Adjusted Model 2 (adjusted for Block 2 & 3 Factors)	Adjusted Model 3 (additionally adjusted for Life Stress)	Adjusted Model 4 (additionally adjusted for PTSD)	Adjusted Model 5 (additionally adjusted for Depression)
Number of Deployments *b* (SE), *p* value	2.42 (±3.53), NS				2.82, (±3.03), NS
Time Away from Home related to Deployments *b* (SE), *p* value	.33 (±.39), NS				-.10 (±.35), NS
Perceived Threat of most recent Deployment *b* (SE), *p* value	.97 (±.42), 0.025**	.75 (±.42), 0.076*	.62 (±.42), NS	.34 (±.45), NS	-.03 (±.41), NS
Warfare Exposure of most recent Deployment *b* (SE), *p* value	M: 16.96 (±9.51), 0.077* H: 38.44 (±17.08), 0.026**	M: 15.19 (±9.23), NS H: 32.19 (±17.04), 0.062*	M: 13.67 (±9.07), NS H: 34.10 (±16.73), 0.044**	M: 9.24 (±9.33), NS H: 31.30 (±16.64), 0.063*	M: 6.91 (±8.51), NS H: 15.07 (±15.55), NS
Including all four Deployment Factors Together *b* (SE), *p* value	#: 1.32 (±4.39), NS TA:-.12 (±.51), NS PT: .70 (±.46), NS M: 12.11 (±10.52), NS H: 32.37 (±17.93), 0.074*	#: 2.90 (±4.32), NS TA:-.24 (±.51), NS PT: .53 (±.45), NS M: 11.46 (±10.21), NS H: 27.65 (±17.93), NS	#: 5.34 (±4.35), NS TA:-.48 (±.51), NS PT: .40 (±.45), NS M: 11.01 (±10.00), NS H: 31.16 (±17.60), 0.080*	#: 4.70 (±4.35), NS TA:-.46 (±.51), NS PT: .18 (±.47), NS M: 8.78 (±10.05), NS H: 30.84 (±17.50), 0.081*	#: 5.38 (±3.95), NS TA:-.61 (±.46), NS PT: .08 (±.43), NS M: 8.41 (±9.11), NS H: 17.14 (±16.12), NS

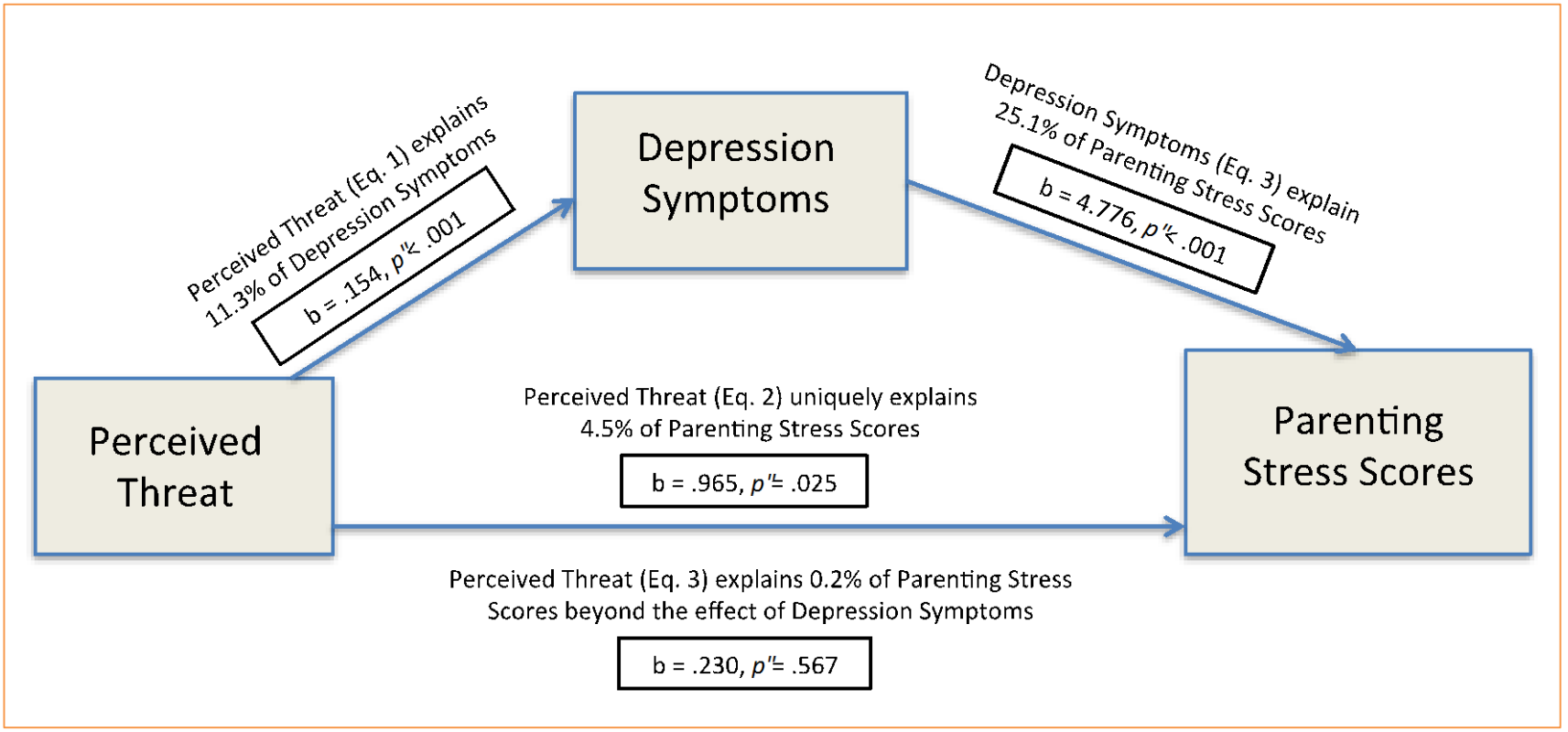

Figure 1. Analysis of Depression Symptoms as a Mediating Variable between Perceived Threat and Parenting Stress Scores in the Full Sample

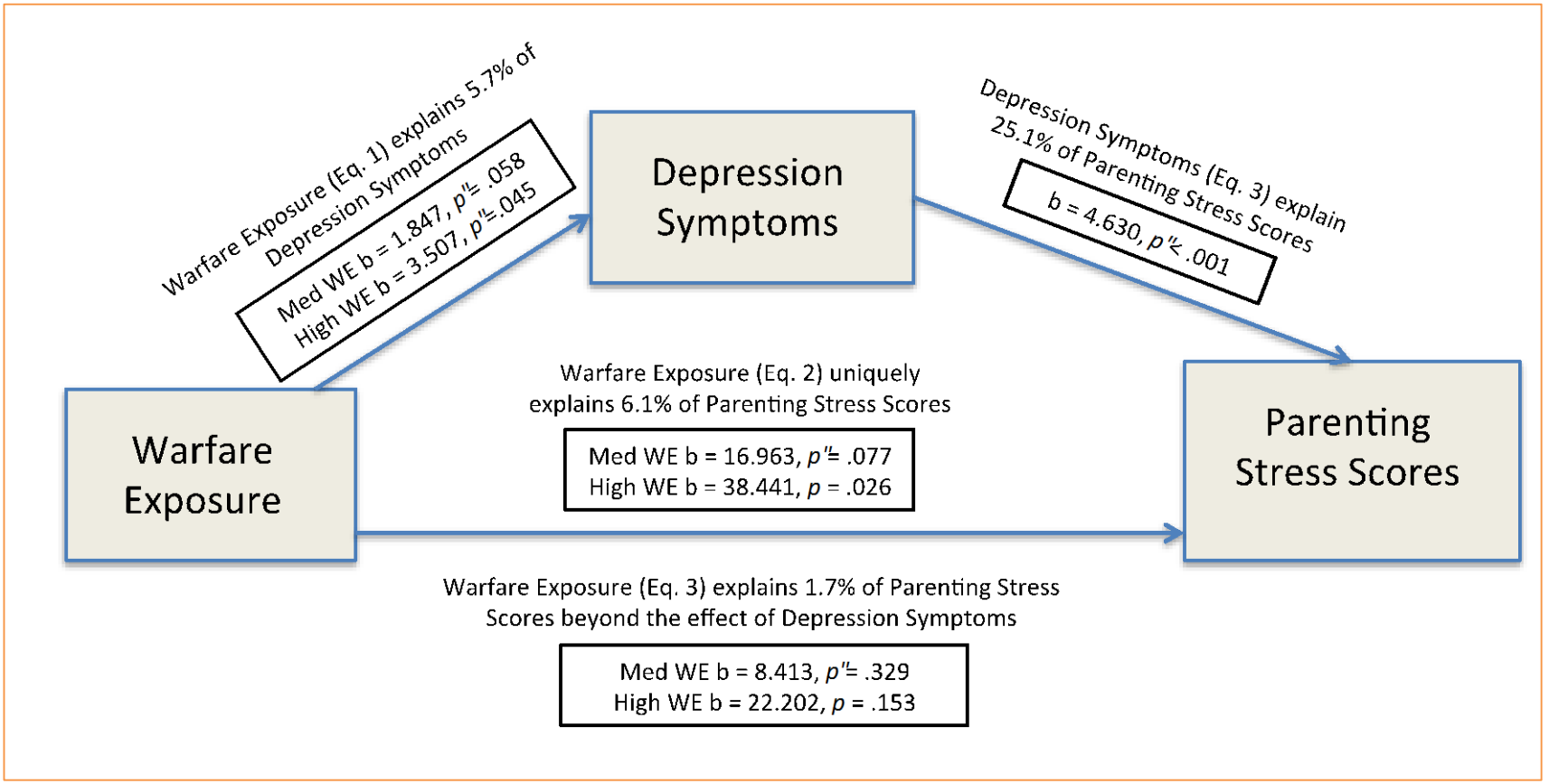

Figure 2. Analysis of Depression Symptoms as a Mediating Variable between Warfare Exposure and Parenting Stress Scores in the Full Sample

most recent deployment. In a health care setting, higher values on these cues can signal to the clinician that a more in-depth assessment of family processes is needed. Depending on the outcome of this assessment, outreach to family members may be indicated.

Additionally, the impact of depression as a potential mediator in this study was striking. Prior research has highlighted the importance of PTSD in negatively affecting military fathers' parenting satisfaction and the quality of parent-child relationships (Gewirtz et al., 2010; Ray & Vanstone, 2009; Samper et al., 2004). However, within this sample, depression symptoms appear to be an even more significant factor affecting the parenting stress of military fathers.

The secondary aim is to examine whether, and to what extent, social support and spirituality impact parenting stress while controlling for demographic variables: a) in recently returned male active duty parents, and b) in female civilian spouses of the recently returned male active duty parents.

Descriptive characteristics for the study sample of active duty Navy fathers and female civilian mothers can be seen here in Table 3.

Table 3
Descriptive Variables for Fathers (n=111) and Mothers (n=82)

	Fathers (M, SD)	Mothers (M, SD)
Demographics		
Age	32.14 (±6.10)	30.48 (±5.06)
Years of Education	14.23 (±2.29)	15.18 (±2.56)
Years of Marriage	6.37 (±3.80)	5.89 (±3.56)
Number of Children	2.06 (±1.13)	1.95 (±1.01)
Years in the Military	10.03 (±5.33)	9.85 (±5.44)
Predictors		
Number of Deployments	2.39 (±1.27)	2.39 (±1.66)
Time Away from Home (months)	19.95 (±11.31)	18.33 (±11.25)
Perceived Threat	24.06 (±10.30)	24.33 (±10.17)
Life Stress	10.66 (±9.01)	9.41 (±8.21)
PTSD	1.03 (±1.37)	0.94 (±1.29)
Depression	4.70 (±4.73)	4.28 (±4.67)
Social Support	80.76 (±15.39)	77.89 (±16.77)
Spirituality	57.70 (±23.62)	65.54 (±20.13)
Outcome		
Parenting Stress	216.93 (±46.72)	218.11 (±46.50)

	Fathers (n, %)	Mothers (n, %)
Demographics		
Weekly childcare	50 (45.05)	35 (42.68)
Currently employed	111 (100.00)	30 (36.59)
Race Caucasian African-American Other	 72 (64.86) 26 (23.42) 13 (11.71)	 55 (67.07) 18 (21.95) 9 (10.98)
Hispanic	19 (17.12)	16 (19.51)
Rank Junior enlisted Senior enlisted Junior officer Senior officer	 49 (44.14) 46 (41.44) 10 (9.01) 6 (5.41)	 36 (43.90) 33 (40.24) 9 (10.98) 4 (4.88)
Deploy location Iraq/Afghan Ship-based Other	 7 (6.31) 75 (67.57) 29 (26.13)	 6 (7.32) 59 (71.95) 17 (20.73)
PTSD positive screens	19 (17.12)	11 (13.41)
Depression positive screens	19 (17.12)	12 (14.63)
Top 6 Life Stressors 1 2 3 4 5 6	 Promotion at work: 42 Move to new location: 41 Conflict w/superiors: 32 Pregnancy: 23 Began new job: 24 Death close friend: 21	 Move to new location: 35 Pregnancy: 25 Promotion at work: 23 Entered new school: 17 Began new job:17 Marriage: 11
Predictors		
Warfare Exposure Low Med High	 68 (61.26) 35 (31.53) 8 (7.21)	 52 (63.41) 25 (30.49) 5 (6.10)

Mean scores for social support were high for both mothers and fathers, ranging in the upper quartile of the scale. Fathers' mean scores for spiritual experience were slightly above the midpoint for the scale; mothers' mean scores were in the upper tertile of the instrument.

To explore the relationship between spirituality and parenting stress, a hierarchical multiple regression was analyzed. Simple linear regression was used to obtain the unadjusted association between spirituality and parenting stress scores (model 1).

Thereafter, this association was adjusted for years of education, childcare arrangements, and years in the military (model 2). Life stress and PTSD were then added in (model 3), and then depression (model 4), and finally the four deployment factors of interest (model 5). The dependent variable was the parenting stress score. Results of this analysis for fathers and mothers can be seen in Table 4. Results of the almost identical analysis (where social support replaced spirituality) can be seen in Table 5.

Spirituality and social support were both significant independent predictors of total parenting stress scores. The magnitude of these effects decreased slightly but remained significant after adjusting for other factors. The higher the levels of both spirituality and social support, the lower the levels of parenting stress for both fathers and mothers.

As this was a cross-sectional study, causality cannot be inferred, but the results do confirm and advance other research advocating social support as an appropriate intervention for at-risk families (Cooklin et al., 2012; McConnell et al., 2011; Solem, Christophersen, & Martinussen, 2011). This is the first study to specifically investigate spirituality in the context of parenting stress.

These results confirm and advance the importance of the Chaplain Corps as an invaluable asset for military personnel and their families. The Chaplain Corps serve the spiritual needs of military members, no matter their religious background (Besterman, Dahan, Gibbons, Barnett, & Hickling, 2012). This resource could be highlighted and bolstered within the various services. There has been a recent push to better integrate chaplains with mental health providers within military health care (Nieuwsma et al., 2014). With enhanced integration of services, interventions could be designed incorporating chaplains, nurses, psychologists, social workers, physicians, and others who could develop multi-dimensional programs to provide support to military families experiencing deployment.

Table 4
Regression of Spirituality on Parenting Stress for Fathers and Mothers Across Multiple Models for the Full Sample

n=111 fathers n=82 mothers	Model 1 (Unadjusted)	Adjusted Model 2	Adjusted Model 3 (additionally adjusted for Life Stress & PTSD)	Adjusted Model 4 (additionally adjusted for Depression)	Adjusted Model 5 (additionally adjusted for Deployment Factors)
Spirituality for Fathers *b* (SE), *p* value	-.50 (±.18), 0.007	-.45 (±.18), 0.016	-.49 (±.17), 0.006	-.39 (±.16), 0.016	-.37, (±.16), 0.028
Spirituality for Mothers *b* (SE), *p* value	-1.15 (±.22), <0.001	-1.12 (±.22), <0.001	-1.06 (±.22), <0.001	-.78 (±.20), <0.001	-.81 (±.21), <0.001

Table 5
Regression of Social Support on Parenting Stress for Fathers and Mothers Across Multiple Models for the Full Sample

n=111 fathers n=82 mothers	Model 1 (Unadjusted)	Adjusted Model 2 (w/Block 2 & 3 Factors)	Adjusted Model 3 (additionally adjusted for Life Stress & PTSD)	Adjusted Model 4 (additionally adjusted for Depression)	Adjusted Model 5 (additionally adjusted for Deployment Factors)
Social Support for Fathers *b* (SE), *p* value	-1.61 (±.25), <0.001	-1.51 (±.26), <0.001	-1.41 (±.26), <0.001	-1.19 (±.24), <0.001	-1.14, (±.25), <0.001
Social Support for Mothers *b* (SE), *p* value	-1.42 (±.27), <0.001	-1.40 (±.27), <0.001	-1.24 (±.26), <0.001	-.88 (±.25), 0.001	-1.03 (±.26), <0.001

The tertiary aim is to examine the possible moderating effect of social support and spirituality on the relationship between deployment factors and parenting stress.

To examine a possible moderating effect of spirituality, we examined main effects and interaction effects within a hierarchical multiple regression. The main effects of spirituality and each individual deployment factor were entered, and then the interaction terms of spirituality with each deployment factor were added. The same process was replicated, substituting social support for spirituality.

When the moderation analyses were run for the full sample of fathers, the interactions between 1) spirituality and perceived threat ($p = 0.039$) and 2) spirituality and high warfare exposure ($p = 0.027$) were significant. There were no significant results related to social support for fathers.

In the low spirituality group, there was a positive relationship between perceived threat and total parenting stress scores (R^2=.156). In the medium spirituality group, there was a small positive relationship between perceived threat and PSI scores (R^2=.065). In the high spirituality group, there was no relationship between perceived threat and PSI scores (R^2=.005). Higher levels of spirituality moderated the relationship between perceived threat and parenting stress scores, such that this relationship was weakened; this can be seen in Figure 3.

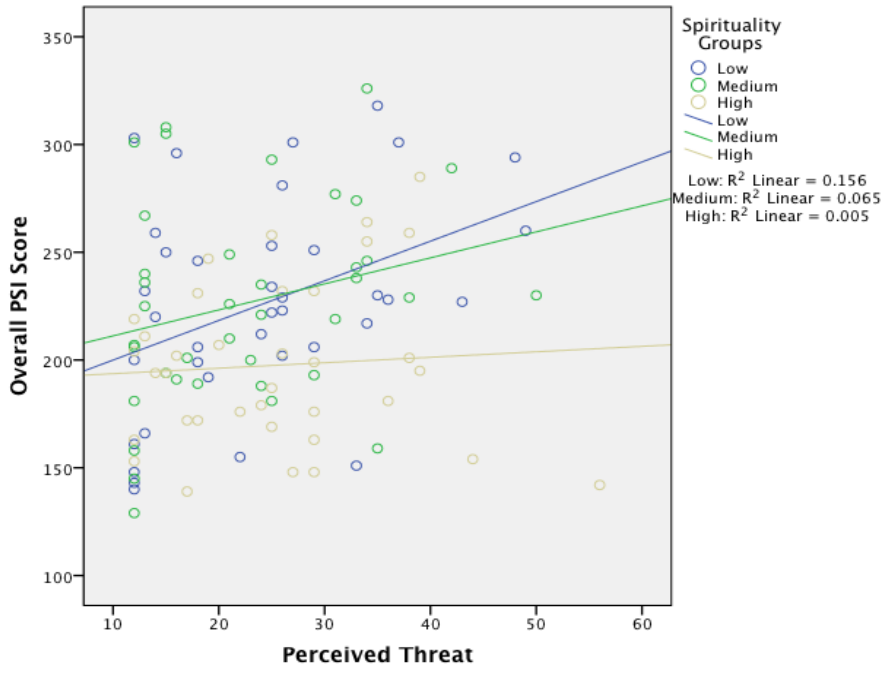

Figure 3. Graphical Representation of the Moderation Effect of Spirituality on Perceived Threat and Parenting Stress Scores in the Full Sample.

The effect of spirituality on the relationship between different levels of warfare exposure (low, medium, and high), and total parenting stress was evaluated. Because the variable of warfare exposure was categorized, graphical representations looked at the relationship between spirituality and parenting stress scores among different levels of warfare exposure. In the low warfare exposure group, there was a moderate negative relationship between spirituality and total parenting stress scores (R^2=.173); thus higher levels of spirituality were associated with lower PSI scores. In the medium warfare exposure group, there was a small negative relationship between spirituality and PSI scores (R^2=.019). In the high warfare exposure group, there was a moderate positive relationship between spirituality and PSI scores (R^2=.166). For those fathers with higher warfare exposure (n=8), the higher their levels of spiritual experience, the higher their parenting stress scores; a graphical representation of these relationships can be seen in Figure 4.

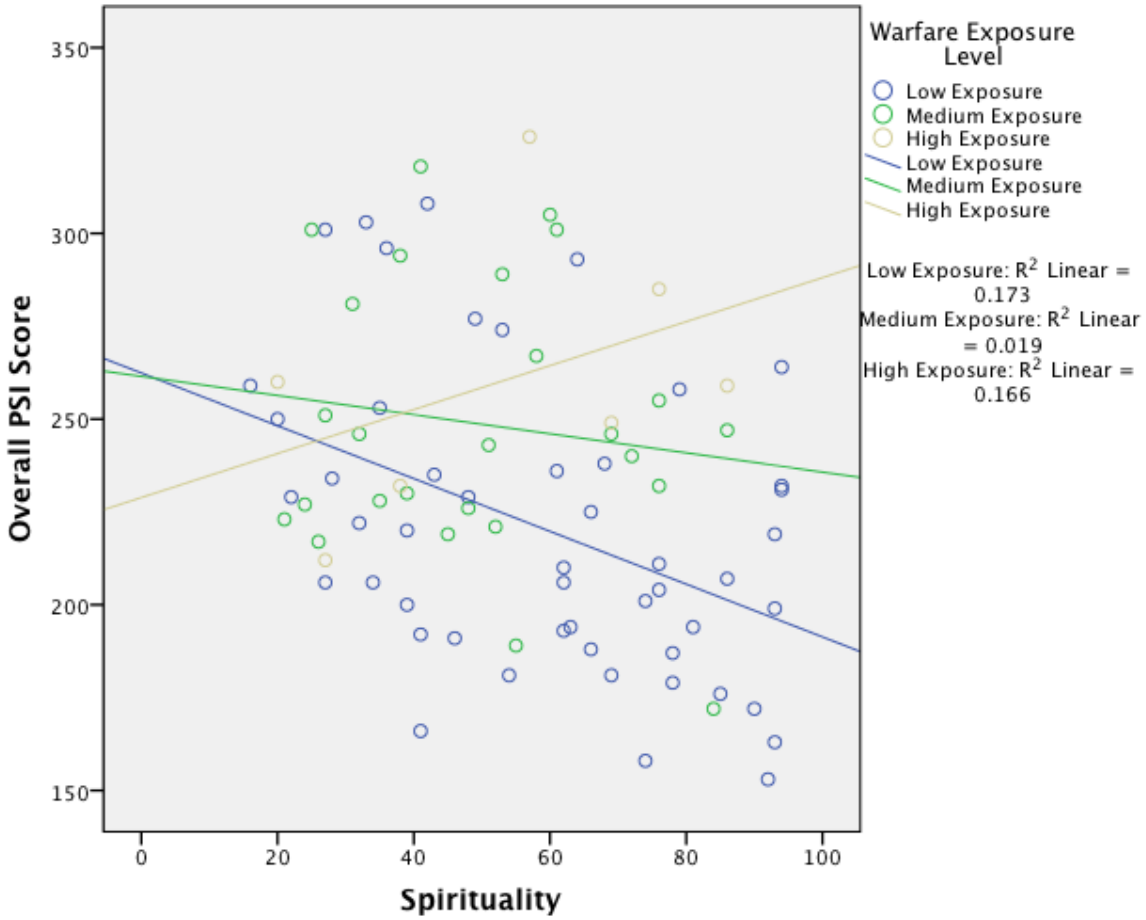

Figure 4. Graphical Representation of the Relationship between Spirituality and Parenting Stress Scores among Different Levels of Warfare Exposure.

Of note, the mean elevated parenting stress scores for the high spirituality group were still within the normal PSI range, while the mean high scores for the low and medium spirituality groups were in the high range of the instrument, where clinical intervention is indicated.

Why would high levels of spirituality act to strengthen the relationship between deployment factors and parenting stress? Individuals call upon their spiritual reserves in times of high uncertainty and conflict (Ellison & Fan, 2008). This may explain why spirituality is a strong moderator of the link between these deployment factors and parenting stress. For example, fathers who experience more feelings of threat on deployment may utilize the comfort gained from their spiritual experience to help them cope with uncertainty and danger. Their heightened feelings of danger from deployment are linked to increases in parenting stress upon return to family (Yablonsky, Yan, & Bullock, in press), but high levels of spirituality appear to keep these stresses within a more normal range of experience. Spiritual experience does not cause stress to disappear, but it may make the stress more manageable for fathers.

Relationship of current findings to previous findings:

It is not possible to completely differentiate depression symptoms as either a mediating variable or a confounding variable in the relationship between deployment factors and parenting stress scores in fathers. Based on prior literature which shows a link between combat exposure/deployment and mental health concerns (Bray et al., 2010; Milliken, Auchterlongie, & Hoge, 2007; Sareen et al., 2007), depression symptoms are most likely to be a mediating variable; for example, perceived threat will influence depression symptoms, which will subsequently influence parenting stress.

Another striking finding of this study was the very high percentage of PSI defensive responders in this sample of Navy fathers (25.2%) in comparison to normative rates of between 5-8% within the general population (Parkes et al., 2011). There is no way to differentiate if these individuals were reporting much lower levels of parenting stress than they were actually experiencing, or if they were exceptionally competent parents with excellent support.

The high level of PSI defensive responders suggests that participants were reluctant to answer without reservation, and may have preferred an anonymous, rather than a confidential, survey. Past rates of PTSD and depression reported anonymously versus confidentially were at least twice as high in military samples (McLay et al., 2008; Warner et al., 2011). Also, defensive responding could be explained by the fact that the fathers were "not invested in the role of parent and, therefore, is [sic] not experiencing the usual stresses associated with caring for a child" because of their extended time commitments to the military organization (Abidin, 2012, p. 59).

Bearing in mind the high rates of defensive responding on the PSI within this sample, it is surprising that the rates of PTSD and depression were higher in this study than in previous studies of service members returning from deployment. If 25% of fathers were in the defensive responding category on the PSI, they may have also under-reported symptoms of PTSD and depression; if this were true, rates of depression and PTSD could actually be higher than those reported here. In this study, PTSD and depression occurred at the same rate of 17.1%, as compared to other studies where rates for PTSD were in the range of 2.1% to 9.8% using the same PTSD screening instrument (Hoge, Auchterlonie, & Milliken,

2006; Milliken et al., 2007; Warner et al., 2011), and rates for depression were in the 5.2% to 7.0% range using a similar PHQ screening instrument to the one used in our study (Hoge et al., 2008; Kolkow, Spira, Morse, & Grieger, 2007; Warner et al., 2011).

Mothers and fathers in this study sample had similar rates of PTSD (13% and 17%), and similar rates of depression (14% and 17%). Rates of depression and PTSD for mothers in this study were similar to those found in other recent studies, which ranged from 13.1% to 30% for depression (Gorman, Blow, Ames, & Reed, 2011; Lester et al., 2010; Mansfield et al., 2010), and from 1.1 to 21% for PTSD (Gorman et al., 2011; Mansfield et al., 2010; Melvin, Gross, Hayat, Jennings, & Campbell, 2012; Renshaw et al., 2011).

Increased levels of social support have consistently been shown in the literature to be associated with decreased levels of parenting stress (Cooklin, Giallo, & Rose, 2012; Flake, Davis, Johnson, & Middleton, 2009; McConnell, Breitkreuz, & Savage, 2011), and this was confirmed in this cross-sectional study.

Effect of problems or obstacles on the results:

Recruitment was slow in the first six months for several reasons.
1) A late start for initial recruitment related to delayed disbursement of funding through UVa, and a lengthy, laborious process for purchasing of study equipment.
2) The PI was new to the research recruitment process, and it took 1-2 weeks for her to establish a recruitment routine that was comfortable and consistent.
3) Recruitment began in mid-November, two weeks before the Thanksgiving holiday season, and continued through the December holiday season, where clinic day-to-day patient census was lower than usual. In January, there were 2-3 days for three consecutive weeks where the clinic and local schools were closed because of inclement weather.
4) The Sewell's Point Medical Clinic may not be the primary healthcare delivery site for many young enlisted shipboard personnel, and this may have affected recruitment.

Due to the low recruitment numbers in December 2013, the PI submitted an amendment to the IRB to expand recruitment efforts in several ways. The Fleet and Family Support Center (FFSC) owns an email distribution list which can reach all land-based and shipboard commands that are currently stationed at Naval Station Norfolk. The FFSC agreed to send a message to its entire distribution list, explaining the study, and giving the contact information for the PI. Additionally, there is a monthly chaplain training for all Navy chaplains in the Hampton Roads geographic location, and the Fleet Chaplain's Office invited the PI to speak about the study at this venue, and to provide recruitment materials for chaplains to take with them back to their sailors. This amendment was approved by the IRB, and was implemented after notification of approval by the NMCP Commanding Officer on 20 February 2014.

After that time, recruitment increased from about five active duty fathers per month, to more than 20 per month.

However, another impediment to the study arose in terms of internet connectivity within the clinic. The clinic activated a Wi-Fi system in February 2014, but around the same time, the AT&T reception on the iPads became much slower than usual. In March, the PI attempted to change iPad service to Verizon, but after a month of exploration, this proved to be impossible related to hardware incompatibility issues. Therefore, the PI had to change the location of where participants answered the survey: previously, the survey questions were answered in a private room in the clinic, but as Wi-Fi connectivity and AT&T connectivity were abysmal in this room, participants could only answer the survey questions in the waiting areas. This did not seem to be a deterrent to participants, although there was less ability to establish a rapport between the PI and study participants in the middle of a busy clinic waiting area.

Otherwise, there were no other significant obstacles during the study.

Limitations:

Recruitment occurred at a large military outpatient clinic serving a wide range of Navy personnel, but if specific subsets of the Navy active duty population frequented this clinic more often, the sample would be biased. The sample is already biased based on the nature of volunteer enrollment – volunteers who enroll may reflect a certain type of individual who is not generalizable to the population. It was heartening to note, however, that over a seven month recruitment period within the clinic, the demographics of the final sample was fairly representative of the larger Navy population.

There were high rates of defensive responding on the Parenting Stress Index. Within the study sample of mothers and fathers, 20% met the criteria for defensive responding, which is much higher than the 5 to 8% rate reported in the general population (Parkes et al., 2011). This indicates that there may be privacy concerns and worries about disclosure in this population. Active duty participants may not have felt comfortable responding honestly to confidential questions regarding warfare exposure, mental health, or parenting stress. One potential active duty study participant was very direct, and refused to participate unless the survey could be anonymous; he could not be enrolled (anon, personal communication, April 23, 2014).

Several studies in military samples have shown that anonymous surveys elicit higher positive responses for mental health concerns versus surveys that can be linked with identifying data (McLay et al., 2008; Warner et al., 2011). The information from our sample suggests that civilian wives of military members may also be more guarded in their responses than a civilian sample unaffiliated with the military. This is a limitation of our study, and also may limit future understanding of how deployment factors affect the military family.

Another limitation of this study was the very low number of participants who had experienced high warfare exposure. This most likely underpowered the results on that variable; with only eight participants, it is difficult to make any definitive conclusions. One participant noted that he did not answer the combat exposure questions transparently

because he felt that if he did he would jeopardize operational secrets (anon, personal communication, November 18, 2013). The study itself took most participants approximately 30 minutes to complete on a handheld tablet. The survey was accessed via an online portal, and at times Internet connectivity was excessively slow. Participants may have had survey fatigue at certain points, and may have quickly answered questions in one way to get through the survey quicker. Participants were in a clinic setting, and had other things that they wanted to do once they completed the questionnaires. More than one respondent commented on the unexpected length of time it took to complete the survey, despite being informed of an average thirty minute duration by the investigator ahead of time (anon, personal communication, May 19, 2014).

This was a cross-sectional study; a larger study utilizing a longitudinal design would be appropriate to explore the relationships among these different variables in more detail.

Conclusion:

This study found significant associations between several deployment factors and parenting stress in Navy fathers who had been home from deployment between three and twelve months' time. For these active duty fathers, the more they reported increases in these deployment factors (perceptions of threat level on their most recent deployment, and warfare exposure on their most recent deployment), the more likely they were to report increased parenting stress now at home. Past research shows that as parenting stress increases, positive parenting behaviors decrease, which can ultimately lead to increased child distress. This information is highly relevant for the assessment, and provision, of appropriate services for military service members and their families.

This study also found that higher spirituality and higher social support scores both significantly predicted lower parenting stress in both Navy fathers and civilian mothers within our sample. Additionally, while social support did not emerge as a moderator of the relationship between deployment factors and parenting stress in fathers, spirituality was a significant moderator of these relationships. Fathers with high levels of spiritual experience who also experienced increased perceptions of danger on their most recent deployment, actually had normative levels of parenting stress versus their counterparts with low and medium level of spirituality, whose PSI scores were in the high, clinically significant range.

Significance of Study Results to Military Nursing

As the quantitative study design was cross-sectional, there is no ability to extract causal findings from the results showing an association between deployment factors and parenting stress in Navy fathers. However, the strong associations found in the analysis can be useful in prompting clinicians to ask the service member about their immediate family members, and to explore family dynamics. Being able to identify specific factors which could increase parenting stress (such as perceived threat on most recent deployment, and warfare exposure of most recent deployment) will alert nurses to which families may need additional support and intervention.

In this study as measures of spirituality and social support increased, parenting stress scores decreased. Levels of social support are important not just for parents, but for children as well. Flake and colleagues (2009) found that one important factor in predicting child psychosocial morbidity was the perception of poor social support by the home front parent. Additionally, families may have increased risk for both negative mental *and* physical health outcomes when they do not have a relationship with a particular clinic staff member, or clinic provider, which may make them less likely to access health care. As resources are strained during deployment, families may also neglect their spiritual health, and feel disengaged and disconnected. The deployment process is qualitatively difficult for all military family members (Yablonsky, Barbero, & Richardson, 2015).

Spirituality was an important mitigator of parenting stress in this study, and an area that nurses can focus on for potential intervention. Assessment of spirituality is often ignored in health care, but spirituality can be an important way for individuals to find support and meaning within difficult circumstances, whether they have strong religious beliefs or not (Hamlin-Glover, 2009; Schneider & Mannell, 2006). One possible avenue for a spirituality intervention is suggested by Nardi and Rooda's practice theory of spirituality-based nursing (2011). In this model, nurse spiritual actions include therapeutic touch, massage, prayer, meditation, and guided imagery. Another type of spirituality intervention could consist of weekly meditation or guided imagery session, followed by focused discussion of spiritual (non-sectarian) themes. In our electronic age, this could be supplemented by a weekly reflective passage, sent via email or text, touching on spiritual themes (e.g. gratefulness, connection, compassion). Advocating for spirituality as a nursing intervention could involve teaching nurses how to provide spiritual care to their patients, by working to develop a spirituality toolbox that nurses could use at appropriate times. The design of any type of spirituality intervention geared for military families would be greatly enhanced by the participation and input of military and civilian chaplains.

It is very important to assess for PTSD and depression in military active duty members, and in veterans. The prevalence rates of these symptoms in this sample of Navy fathers was higher than rates reported previously in surveys of male active duty members. These findings suggest that it may be even more important to conduct these assessments with fathers, whose mental health can have impact on all the other members of the family.

There have previously been no direct linkages between valid and reliable measures of deployment experience and parenting stress scores. This research shows that there is a connection, and opens up further questions. For example, what are the effects of deployment factors on the parenting stress of active duty mothers? Single parents? Dual active duty parents? Longitudinal data on these concepts would be ideal, in order to evaluate causal linkages, as well as to identify times where specific interventions may be the most effective or the most necessary. In the current study, less than ten fathers met the criteria for high warfare exposure, severely underpowering any associations that might otherwise exist. In addition, in a longitudinal study, the exact mechanism and role of depression in influencing parenting stress could be evaluated.

Another consideration for future research was the very high percentage of Navy fathers in our sample (25.2%) who, according to their answers on the Parenting Stress Index, were classified as defensive responders. In military samples, rates of PTSD and depression reported anonymously are at least twice as high as the rates reported confidentially (McLay et al., 2008; Warner et al., 2011). The 25% rate of defensive responding in this active duty sample shows that service members may be reluctant to even admit parenting stress, much less a mental health diagnosis.

The goal of future research would be to develop innovative behavioral interventions, utilizing aspects of spirituality, social support, and open communication, to promote healthy parenting in military families dealing with the unique stressors of deployment, looking at eventual positive change in child psychosocial symptoms as the desired outcome measure. Increases in parenting stress could lead to poor child outcomes ranging from delays in preschool language (Noel, Peterson, & Jesso, 2008; Oxford & Lee, 2011), up to and including maltreatment (Taylor et al., 2009), as parents become less patient, less nurturing, and may feel more isolated.

The results from this study open the way for nurse researchers to design appropriate and effective interventions with military families that can be implemented and championed by all health care providers. This is significant because nurses interact with many families under stress – in communities, in hospitals, in clinics, in schools, and in homes. This research gives nurses insight into some of the stresses that affect the military family, and how best to assess and intervene for beneficent outcomes.

Changes in Clinical Practice, Leadership, Management, Education, Policy, and/or Military Doctrine that Resulted from Study

None to date.

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Yablonsky, A.M., Barbero, E.D., & Richardson, J. W. (2015). Hard is normal: Military families' transitions within the process of deployment. *Research in Nursing and Health*, *39*(1), 42-56. doi: 10.1002/nur.21701

Yablonsky, A. M, Yan, G., & Bullock, L. (in press). Parenting stress after deployment in Navy active duty fathers. *Military Medicine.*

Summary of Dissemination

Type of Dissemination	Citation	Date and Source of Approval for Public Release
Publications	Yablonsky, A.M., Barbero, E.D., & Richardson, J. W. (2015). Hard is normal: Military families' transitions within the process of deployment. *Research in Nursing and Health*, *39*(1), 42-56. doi: 10.1002/nur.21701	11 SEPT 2014 – TSNRP PAO
	Marter, A. (2015). *The impact of deployment on Navy families: Mitigators, mediators, and moderators of parenting stress* (Doctoral dissertation). Retrieved from http://www.virginia.edu/	25 MAR 2015 – BUMED PAO
Publications in Press	Yablonsky, A. M., Yan, G., & Bullock, L. (in press). Parenting stress after deployment in Navy active duty fathers. *Military Medicine.*	20 MAR 2015 – TSNRP PAO
Published Abstracts	N/A	
Podium Presentations	Yablonsky, A.M. (2015, September). Psychological health in Navy fathers returning from deployment in the past year. Podium presentation at TriService Nursing 'Research and EBP Dissemination Course,' San Antonio, TX.	29 JULY 2015 – NMCP PAO
	Marter, A. (2014, September). Link between deployment factors and parenting stress in Navy families. Podium presentation at TriService Nursing 'Research and EBP Dissemination Course', San Antonio, TX.	03 SEPT 2014 – TSNRP PAO

Poster Presentations	Yablonsky, A. M. (2016, February). Parenting stress in Navy families: The importance of spirituality and social support. Poster presentation at 2015 Military and Veteran Resiliency Summit, Naval Medical Center San Diego, CA. Marter, A. (2014, September). Link between deployment factors and parenting stress in Navy families. Poster presentation at TriService Nursing 'Research and EBP Dissemination Course', San Antonio, TX.	04 JAN 2016 – NMCP PAO 03 SEPT 2014 – TSNRP PAO
Media Reports	N/A	
Other	N/A	

Reportable Outcomes

Reportable Outcome	Detailed Description
Applied for Patent	None
Issued a Patent	None
Developed a cell line	None
Developed a tissue or serum repository	None
Developed a data registry	None

Recruitment and Retention Table

Recruitment and Retention Aspect	Number	
Subjects Projected in Grant Application	120 (AD + CIV)	
Subjects Available	clinic population	clinic population
Subjects Contacted by Approved Recruitment Method	3132 (AD+CIV)	3132
Subjects Screened	3021AD	3021
Subjects Ineligible	2824AD	2824
Subjects Refused	84AD/25CIV	109
Human Subjects Consented	113AD/86CIV	199
Subjects Who Withdrew	2AD/4CIV	6
Subjects Who Completed Study	111AD/82CIV	193
Subjects With Complete Data	193	193
Subjects with Incomplete Data	0	0

Summary regarding recruitment and retention: The average number of active duty (AD) fathers recruited was five per month in the first six months, and rose to an average of over 20 per month thereafter. Of those, over 73% of their civilian (CIV) spouses also agreed to be in the study.

Demographic Characteristics of the Sample

Characteristic	Mothers	Fathers
Age (yrs)	30.48±5.06	32.14±6.10
Women, n (%)	82 (42.49)	111 (57.51)
Race		
White, n (%)	55 (28.50)	72 (37.31)
Black, n (%)	18 (9.33)	26 (13.47)
Hispanic or Latino, n (%)	16 (8.30)	19 (9.84)
Other, n (%)	9 (4.66)	13 (6.74)
Military Service or Civilian		
Navy, n (%)	n/a	111 (57.51)
Civilian, n (%)	82 (42.49)	n/a
Service Component		
Active Duty, n (%)	n/a	111 (57.51)
Military Dependent, n (%)	82 (42.49)	n/a